ABSTRACT OF THE DISCLOSURE

The invention relates generally to methods and compositions for altering the differentiation status of cells such as stem and progenitor cells, and producing these cells for transplantation into mammals. The differentiation status of cells can be altered by contacting a nucleic acid decoy molecule to a mammalian cells and culturing the cell, whereby the differentiation status of the cell is altered. Pharmaceutical compositions of the invention are capable of entering a cell and binding to a protein in the cell and thereby altering a septamer function, a septamer-downstream function or a septamer-related function. The methods disclosed herein can be used in treating diseases by providing new cells to ameliorate symptoms of the disorder. Preferably, methods of the invention create homogeneous populations of progenitor and other cells, that can be administered to patients by transplantation. Diseases and disorders that can be treated in this fashion include, but are not limited to, CNS disorders, disorders of the lymphatic system, endothelial cell disorders, epithelial cell disorders, erythropoietic and hematopoietic diseases and disorders, neuro-degenerative disease, and traumatic brain injuries.